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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/447,554	11/23/1999	ZHIGANG FAN	104184	3958

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OLIFF & BERRIDGE PLC
P.O. BOX 19928
ALEXANDRIA, VA 22320

EXAMINER

WU, JINGGE

ART UNIT	PAPER NUMBER
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2623

DATE MAILED: 08/23/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/447,554

Applicant(s)

FAN ET AL.

Examiner

Jingge Wu

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 23 November 1999.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>2</u> . | 6) <input type="checkbox"/> Other: |

Detailed Action

Claim Objections

1. Claim 11 is objected to because of the following informalities: in line 1, "compressed" should be --decompressed--. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

3. Claims 1-5, 7-8, 10, 11-15, 17-18, 20 are rejected under 35 U.S.C. 102(e) as being anticipated by US 6011868 to Christian et al.

As to claim 1, Christian discloses a method for processing decompressed image data, comprising:

receiving decompressed image data (Fig. 8);

determining an estimated quantization table from the received

decompressed image data (col. 12 line 36-col. 13, line 42);

processing the decompressed image data based on the determined estimated quantization table to form processed electronic image data (col. 12 line 36-col. 13, line 42).

As to claim 2, Christian further discloses processing the decompressed image data without using the determined quantization table (col. 6 lines 40-62, note that the quality analyzer is selectable by the user)

As to claims 3-5, Christian further discloses the estimated quantization table comprises determining the estimated quantization table based on at least one maximum likelihood estimation based on a Gaussian distribution(col. 12 line 36-col. 13, line 42).

As to claim 7, Christian further discloses determining the estimated quantization table further comprises generating transformed image data from the decompressed image data using a discrete cosine transform (Fig. 8, col. 12 lines 19-67).

As to claim 8, Christian further discloses generating a histogram from the transformed image data (col. 13, lines 1-20).

As to claim 10, Christian further discloses determining the estimated quantization table further comprises rounding each DCT coefficient of the transformed image data (col. 12 line 36-col. 13 line 20, note that quantization is inherently rounding).

Claims 11-15, 17-18, and 20 are the corresponding system claims to claims 1-6, 7-8 and 10 respectively. The discussions are addressed with regard to claims 1-6, 7-8 and 10.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 9 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Christian in view of the article "Statistical analysis of the DCT coefficients and their quantization error" to Yovanof et al.

As the claims 9 and 19, Christian does not explicitly mention the using three levels to determine the quantization table.

Yovanof, in an analogous environment, discloses identifying a level of a main lobe of the histogram having a highest peak and two adjacent levels of the histogram adjacent to the identified level (Fig. 4); and

determining the quantization table based only on the identified and adjacent levels of the histogram (Figs. 3-4, page 602-603).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the scheme of Yovanof in the method of Christian in order to improve the modeling of error incurred during the quantization of the DCT coefficient and the quality of the images (Yovanof, page 601-602 section 1).

6. Claims 6 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Christian in view of US 5150433 to Daly.

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As to claims 6 and 16, Christian does not explicitly mention detecting the uniform area of a block.

Daly, in an analogous environment, discloses the steps of:

determining, for each block, if that block has one of truncated image data values or uniform image data values (col. 2, col. 4 line 60-col. 5 line 8); and excluding (bypassing) any block having at least one of truncated (uniform) image data values (col. 4 line 60-col. 5 line 51).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the scheme of Daly in the method of Christian in order to improve the quality of the images (Daly, col.1 lines 14-61).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 5719843 to Nakajima, US 6134280 to Matui and the article "Biased reconstruction for JPEG decoding" to Price et al. disclose methods for obtaining quantization factor by MLE.

Contact Information

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8. Any inquiry concerning this communication or earlier communications should be directed to Jingge Wu whose telephone number is (703) 308-9588. He can normally be reached Monday through Thursday from 8:00 am to 5:30 pm. The examiner can be also reached on second alternate Fridays.

Any inquiry of a general nature or relating to the status of this application should be directed to TC customer service whose telephone number is (703) 306-0377.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Amelia Au, can be reached at (703) 308-6604.

The Working Group Fax number is (703) 872-9314.

Jingge Wu
Patent Examiner
Art Unit 2623

8/20/02